Information Guide
for
Career and Technical Education Course Assessment Tools

Preparing for College and Careers

July 2012

Assessment-Tool Development Team

This Team included equal representation of Business teachers and Family & Consumer Sciences teachers. Names are listed alphabetically.

Co-Chairs:

- Sandra Carmichael
  Warsaw Area Career Center

- Dena Irwin
  Shakamak Jr-Sr High School l

Team Members:

- Sharon Abriani, Fremont High School
- Patti Frist, Harrison High School
- Joann Novak, Bloomington New Tech High School
- Sharon Mang, Greensburg Community High School
- Julie Moore, Washington Township Middle-High School
- Tracy Schroeder, Shenandoah High School

Project Coordinated by Teach Sharp LLC

Wanda Fox, PhD	Jana WItte	Claudine Laing-Kean, PhD
Project Director	Project Assistant	Evaluation Consultant

Indiana Department of Education, Center for College & Career Readiness
Office of Career & Technical Education

Peggy Wild, PhD, CFCS, State Program Leader
Family & Consumer Sciences, College & Career Pathways
pwild@doe.in.gov

Eric Ogle
Business, Marketing, and IT Specialist
eogle@doe.in.gov

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Indiana Career and Technical Education Course Assessment Tools

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During June and July 2012, the team of teachers listed on the cover page developed three standards-based assessment tools for the Indiana high school course, *Preparing for College and Careers* course: (1) **Test Blueprint**, (2) **Content Outline**, and (3) **Bank of Multiple Choice Test Items**. In preparation for their work, team members completed an online tutorial that provided an overview of assessment fundamentals and principles of standards-based assessment, plus guidelines for developing the three assessment tools. The team met in person once, in a day-long work session. The balance of their work was done online through weekly web-conferencing sessions, sharing of information and documents on an online team Worksite, and e-mail communications. The draft materials the team developed were posted on an online review site where other teachers examined them and provided feedback. Team members and project staff used the reviewers' input to revise, finalize, and validate the assessment tools.

In this project, the work was standards-based. The Domains and Standards in the current Indiana Course Framework were the starting-point and continuous foundation for the work. In contrast to standards-referenced efforts that begin with existing materials and then locate matching standards, the team's deliberations started first with the standards, and the assessment tools were developed from there.

The **Test Blueprint** is presented on page 4 of this document. The Blueprint shows the standards-based weighting and item distribution recommended by the team for a statewide course assessment. It is important to distinguish between a test blueprint and the overall course curriculum. The Test Blueprint shows the recommended weighting of a 65-item multiple choice test. This may or may not be the same as the weighting of the course curriculum. Other types of assessment may be more suitable for some of the domains and standards included in the Course Framework. Therefore, a domain that is given less weight in the Test Blueprint could be given more emphasis in the overall course, and student achievement would be locally evaluated using other types of assessment tools.

The **Content Outline** also is provided on the pages that follow. It identifies and describes essential topics related to the course standards. The Content Outline is the team's consensus on the essential topics that should be consistently addressed statewide in the course, and which would be expected to be represented in the statewide assessment. The additional details given in the Content Outline provide a framework for local course design, curriculum, and instruction. The Content Outline also will enhance teacher collaboration and consistency of the course across the state. It is important to note that a content outline is not all-inclusive of the topics addressed in the Course Framework nor in a local course, where additional topics may be included.

The Test Blueprint and Content Outline provided the basis for the third assessment tool the team developed, the **Bank of Multiple Choice Test Items**. The items in this bank are based on the essential topics listed in the Content Outline. Items are distributed across these topics, at three levels of cognitive complexity as further explained on the next page. The four-option multiple choice test items each have one correct answer. A large number of items are included in the bank, enabling each online test to be a unique combination of items selected from the item bank through stratified random sampling based on the weighting indicated in the Test Blueprint. For test security purposes, the bank of test items is controlled by the Indiana Department of Education. An online pretest/posttest course assessment for this course will be provided by the DOE for schools/teachers to use on a voluntary basis beginning in the spring semester of 2013.

Test Items and Levels of Cognitive Complexity
The test items included in the test bank were examined and classified in two ways. First, the items were to focus on an essential topic from the Content Outline. Secondly, the items were to represent varying levels of cognitive complexity, or types of thinking required. The Cognitive Complexity Three Level Framework (Fox & Laing-Kean, 2012) was used to classify the test items based on the three levels shown in the center column of the chart below. This Framework draws on classifications by AAFCS (2010), Fox (2001), and Haladyna (2004). Overall, test items classified as Level 1 focus on recall and understanding of an individual fact or concept. Level 2 items involve combined knowledge of at least two familiar facts or concepts to complete an analysis and reach a conclusion. Level 3 questions require understanding and applying relationships among three or more components and typically involve selecting and/or providing relevant information in order to predict, calculate, or make a judgment.

Revised Bloom's Taxonomy Anderson & Krathwohl	*Cognitive Complexity Three Level Framework*	*Depth of Knowledge* Indiana RISE
Remember	**Level 1 – Facts, Concepts** Known truth or experience. Involves knowledge of individual facts and abilities to identify familiar examples or non-examples.	Level 1 – Recall
Understand		Level 2 – Skill/Concept
Apply	**Level 2 - Procedures** Series of events that lead to a result. Involves remembering and understanding at least two types of information to reach a conclusion.	Level 3 – Strategic Thinking
Analyze		
Evaluate	**Level 3 – Principles** Relationships among rules, theories, methods, concepts, or probabilities. Involves multiple facts, concepts, and procedures to predict events.	Level 4 – Extended Thinking
Create		

W.S. Fox & C.A.M. Laing-Kean, Teach Sharp LLC, 2012

The above chart illustrates the relationships among the Cognitive Complexity Three Level Framework used in this project with the six categories of the Revised Bloom's Taxonomy (Anderson & Krathwohl, 2001) and the four categories of the Depth of Knowledge (DOK) framework used in the Indiana RISE system. As the chart shows, the other two systems are fully accounted for in the Three Level Framework. In particular, it is important to note that Level 1 in the Three Level Framework is more extensive that the DOK Level 1, including much of DOK Level 2. Level 2 of the Three Level Framework includes most of DOK Level 3, and Level 3 of the Three Level Framework is primarily comprised of DOK Level 4. Based on this comparison, the following equivalent notations could be used:

Level 1 = DOK 1+2   Level 2 = DOK 2+3   Level 3 = DOK 3+4

References
American Association of Family and Consumer Sciences (AAFCS). (2010). *Information Bulletin for Pre-Professional Assessment and Certification (Pre-PAC) in Nutrition, Food, and Wellness,* pages 5-6. Retrieved from http://www.aafcs.org/res/Credentialing/prepac/Bulletins/Nutrition%20Food%20Wellness%20Information%20Bulletin.pdf
Anderson, L. W., & Krathwohl, D. R. (Eds.). (2001). *A taxonomy for learning, teaching and assessing: A revision of Bloom's taxonomy of educational objectives*. New York: Longman.
Fox, W. S. (2001). *Three-level framework for teaching and learning*. West Lafayette, IN: Department of Curriculum & Instruction, Purdue University.
Haladyna, T. M. (2004). *Developing and validating multiple-choice test items* (3rd ed.). Mahwah, NJ: Lawrence Erlbaum.
Indiana Department of Education (n.d.). *RISE Evaluation and Development System: Student Learning Objectives Handbook,* page 36. Retrieved from http://www.riseindiana.org/sites/default/files/files/Student%20Learning/Student%20Learning%20Objectives%20Handbook%201%200%20FINAL.pdf

Test Blueprint for *Preparing for College and Careers*					
Domain	**Weighting**	**Number of Test Items**			
		Cognitive Levels[1]			**Totals**
		L1	**L2**	**L3**	
1. Exploring Self	25%	6	5	5	16
2. Exploring Careers	15%	4	3	2	9
3. Exploring College & Postsecondary Options	15%	4	3	3	10
4. Making Decisions	5%	1	1	1	3
5. Making a Plan	10%	3	2	2	7
6. Personal Skills	10%	3	2	2	7
7. Employability Skills	20%	5	4	4	13
Totals	100%	26	20	19	65

[1]Proportional representation of cognitive levels within in each Domain is based on the Cognitive Complexity Three Level Framework (Fox & Laing Kean, 2012), which is correlated with the Indiana RISE Depth of Knowledge (DOK) framework.

Level 1 - 40%	Level 2 - 30%	Level 3 – 30%
Level 1 = DOK 1+2	Level 2 = DOK 2+3	Level 3 = DOK 3+4

Content Outline

A Content Outline is based on the Indiana Course Framework for a specific course. Each Content Outline was developed by a team of Indiana educators and represents their consensus on the essential topics that should be consistently addressed statewide in the specific course, and which would be expected to be represented in the statewide Assessment. A content outline is not all-inclusive of the topics addressed in the Course Framework or in a local course. Additional topics may be included in a course as time permits, to address student and community interests and needs.

The Content Outline for *Preparing for College and Careers* is presented on the pages that follow.

Content Outline
for
Preparing for College and Careers

Domain 1 – Exploring Self	Weighting 25%	Number of Test Items 16
Core Standard 1: **Students evaluate personal characteristics to develop and refine a personal profile.**		

PCC 1.1　　　**Assess personal, family and community standards, values and ethics.**

Essential Topics
1. *Personal values*

2. *Individual behavior associated with personal values*

3. *Ethics*

   a. *Normative ethics—practical means of determining a moral course of action*

   b. *Applied ethics—determine how moral outcomes can be achieved in a specific situation*

4. *Values and ethics related to personal decisions*

PCC 1.2　　　**Analyze personal aptitudes, traits, interests, attitudes, and skills.**

Essential Topics
1. *Individual Personality Types - Myers/Briggs*

   a. *Four domains of personality—Extrovert/Introvert; Sensing/Intuition; Thinking/Feeling; Judging/Perception*

   b. *How groups benefit by having different personality types*

2. *Personal aptitudes*

3. *Personal interests*

4. *Personal attitudes*

5. *Personal self-management, transferrable and job-specific skills*

6. *Compare personal aptitudes, traits, interests, attitudes, and skills to those required in various potential careers*

PCC-1.3　　　**Determine personal priorities and goals for life and career.**
　　　　　　　This will be tested with standards PCC-4.1 and PCC -4.3.

Content Outline – *Preparing for College and Careers* (July 2012)

PCC 1.4   **Determine learning style preferences and their application to lifelong learning.**

Essential topics
1. *Personal Learning Styles—Visual, Auditory, Tactile/Kinesthetic*

2. *Characteristics of learning styles*

3. *Individual personal learning styles*

4. *Strategies to use learning styles in life, school and career*

5. *Life-long learning strategies*

6. *Need for life-long learning*

Domain 2 - Exploring Careers	Weighting 15%	Number of Test Items 10
Core Standard 2: Students investigate one or more Career Clusters and Indiana's College and Career Pathways, based on individual interests, to further define career goals.		

PCC 2.1   **Determine roles, functions, education, and training requirements of various career options within one or more career clusters and pathways.**

Essential topics
1. *Career pathways and career clusters*

    a. *Roles of selected careers*

    b. *Education and training necessary*

    c. *Benefits of selected careers*

2. *Opportunities for growth and advancement*

PCC 2.2   **Analyze career trends, options and opportunities for employment and entrepreneurial endeavors for selected career clusters and pathways.**

Essential topics
1. *Role of Career Clusters in relation to career trends, options and opportunities*

2. *Importance of Job Outlook—Hoosier Hot 50; Bureau of Labor Statistics; various High Wage/High Demand Jobs*

3. *Importance of pathways as related to specific career choices*

Content Outline – *Preparing for College and Careers* (July 2012)

PCC 2.3   **Evaluate selected careers and pathways for education requirements, working conditions, benefits, and opportunities for growth and change**

Essential topics

1. *Explore and conduct research for a variety of careers including these specific areas:*

    a. *Education requirements—high school and post-secondary*

    b. *Working conditions*

    c. *Opportunities for growth and change*

2. *Compare and contrast these opportunities with individual personality traits identified in PCC Core Standard 1.*

PCC 2.4   **Use appropriate technology and resources to research and organize information about careers.**

Essential topics

1. *Importance of using authentic/quality research sources*

    a. *Governmental Resources: Occupational Outlook Handbook; O*Net*

    b. *Career exploration websites-suggested/examples: Kuder- Indiana Career Explorer; CareerCruising; myfuture.com; Drive of Your Life; Career One Stop; COIN; Chronicle Guidance; etc.*

Domain 3 – Exploring College and Postsecondary Options	**Weighting 15%**	**Number of Test Items 10**
Core Standard 3: Students analyze college and other postsecondary options to know what educational opportunities are available after high school.		

PCC 3.1   **Demonstrate understanding of postsecondary educational options including technical certificate programs, apprenticeship, military and two- and four-year college programs.**

Essential topics

1. *Post-secondary Educational Options*
    a. *Public/Private Universities*

    b. *Military*

    c. *Community/Junior Colleges*

    d. *Trade/Technical Schools*

    e. *Technical Certificate Options*

    f. *Apprenticeships*

Based on the *Preparing for College and Careers* Curriculum Framework, February 2011

Content Outline – *Preparing for College and Careers* (July 2012)

        g. *On-the-job training*

        h. *Internships and Cooperative Education*

    2. *Advantages and disadvantages of post-secondary options*

    3. *Create a personal career plan that includes post-secondary education*

PCC 3.2   **Examine public and private colleges and other postsecondary educational options.**

    Essential topics
    1. *Public Institutions*

    2. *Private Institutions*

PCC 3.3   **Demonstrate knowledge of the statewide resources available to explore college and postsecondary options.**

    Essential topics
    1. *Options to pay for post-secondary education*

        a. *Government aid—FAFSA, grants, work study*

        b. *Scholarships—National, School-based, Athletic, Local*

PCC 3.4   **Demonstrate knowledge of the cost of postsecondary educational options and various financial aid options.**

    Essential topics
    1. *Post-secondary options including:*

        a. *Entrance Requirements*

        b. *Tuition*

        c. *Housing/Room and Board*

        d. *Work Study*

        e. *Study Abroad*

Content Outline – *Preparing for College and Careers* (July 2012)

Domain 4 – Making Decisions	Weighting 5%	Number of Test Items 9
Core Standard 4: Students apply higher order thinking and problem solving processes to make decisions about education, life and career.		

PCC-4.1   **Demonstrate skills for questioning and posing problems, thinking independently, and communicating decisions with clarity and precision.**

> *Essential topics*
> 1. *Decision Making Process*
>
> 2. *Steps to the decision-making process for individual and collaborative decisions*

PCC-4.2   **Analyze choices, options and consequences of life and career decisions.**

> *Essential topics*
> 1. *Options and choices that influence life and career decisions*
>
> 2. *Consequences of decisions*
>
>> a. *Positive and negative*
>>
>> b. *Opportunity costs*

PCC-4.3   **Apply a decision-making process to identify short- and long-term life and career goals.**

> *Essential topics*
> 1. *Short- and long-term goals*
>
>> a. *Need for goals*
>>
>> b. *SMART Goals*
>>> 1) *Specific*
>>>
>>> 2) *Measurable*
>>>
>>> 3) *Attainable/require action*
>>>
>>> 4) *Realistic*
>>>
>>> 5) *Time*

Based on the *Preparing for College and Careers* Curriculum Framework, February 2011

Content Outline – *Preparing for College and Careers* (July 2012)

Domain 5 – Making a Plan	Weighting 10%	Number of Test Items 7
Core Standard 5: Students create flexible plans of action for achieving personal goals through secondary education, college, career and life.		

PCC-5.1   **Apply knowledge of Core 40 and Honors diploma requirements to create a high school graduation plan.**

Essential topics
1. *Indiana's Diploma Types and requirements including:*

   a. *Core 40*

   b. *Core 40 with Academic Honors*

   c. *Core 40 with Technical Honors*

PCC-5.2   **Apply decision-making processes to making a plan for postsecondary education and career.**

This will be tested with standards PCC-4.1 and PCC-4.3..

PCC-5.3   **Design a flexible career plan that incorporates life-long learning and career advancement options.**

Essential topics
1 *Types of core, elective, and CTE courses at local level to graduate and prepare for post-secondary options*

2 *Plan is flexible and should be revised at least one time each year*

3 *Process of changing the plan as necessary*

4 *Types of classes necessary at the post-secondary level to plan for dual credit opportunities as well as to be prepared with knowledge and skills to experience success*

PCC-5.4   **Evaluate high school graduation plan, post-secondary plan and career plans in light of decisions about college and career pathways and options.**

Essential topics
1 *Re- evaluate high school graduation plan at least annually*

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Domain 6 – Personal Skills	Weighting 10%	Number of Test Items 6
Core Standard 5: Students demonstrate personal skills needed for success in personal, family, community, and career aspects of life.		

PCC-6.1 **Flexibility and Adaptability**
- **Integrate roles, responsibilities and relationships in a climate of ambiguity and changing priorities.**
- **Evaluate strategies for incorporating feedback and change in a variety of contexts.**

   Essential topics
   1. *Personal skills that translate to employability skills by defining soft skills and understand the importance of developing these skills in high school*

   2. *Roles and the effect of those roles on relationships*

   3. *Strategies to deal with conflict with roles and relationships*

   4. *Types and use of feedback*

PCC-6.2 **Initiative and Self-Direction**
- **Prioritize tactical (short-term) and strategic (long-term) goals.**
- **Work independently and complete tasks without supervision.**
- **Demonstrate initiative to assess past experiences, plan future progress, and expand lifelong learning opportunities to advance skill levels towards a professional level.**

   Essential topics
   1. *Work independently and complete tasks without supervision*

PCC-6.3 **Social and Cross-Cultural Skills**
- **Interact effectively with others in a respectable, professional manner.**
- **Respect cultural differences and work effectively with people from a range of social and cultural backgrounds.**
- **Respond open-mindedly to different ideas and values.**
- **Leverage social and cultural differences to create new ideas and increase both innovation and quality of work.**

   Essential topics
   1. *Social and cultural sub-groups inherent values*

   2. *Social and cross-cultural appreciation*

Based on the *Preparing for College and Careers* Curriculum Framework, February 2011

Content Outline – *Preparing for College and Careers* (July 2012)

PCC-6.4 **Productivity and Accountability**
Demonstrate additional attributes associated with producing high quality products including the abilities to:
- **Work positively and ethically.**
- **Manage time and projects effectively.**
- **Participate actively, as well as be reliable and punctual.**
- **Present oneself professionally and with proper etiquette.**
- **Collaborate and cooperate effectively in teams.**
  Be accountable for results.

  Essential topics
  1. *The role of accountability in quality work*

  2. *Characteristics of accountability including ethics*

PCC-6.5 **Leadership and Responsibility**
- **Use interpersonal and problem-solving skills to influence and guide others toward a goal.**
- **Inspire others to reach their very best via example and selflessness.**
- **Demonstrate integrity and ethical behavior in using influence and power.**
- **Receive and give constructive criticism.**
  Act responsibly with the interests of the larger community in mind.

  Essential topics
  1. *Types of leadership roles*

     a. *Natural skills linked to personality types*

     b. *Strategies to develop personality types*

  2. *Leadership skills individually and in groups*.

Domain 7 – Employability Skills	Weighting 20%	Number of Test Items 13
Core Standard 5: Students demonstrate knowledge and skills needed to navigate life and work environments in the global economy.		

PCC-7.1 **Demonstrate knowledge, skills, and attitudes needed for seeking employment**
- **Career opportunity research.**
- **Personal and career portfolio.**
- **Interviewing.**
- **Networking.**

  Essential topics
  1. *Positive employability skills in the following areas*

     a. *Resume & Cover Letter*

     b. *Job application*

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        c. Interview

        d. Thank-you letter

PCC-7.2   **Demonstrate knowledge and skills needed for effective communication in school, life and career settings**

        Essential topics
1. *Positive communication skills*

2. *Effective communication techniques*

PCC-7.3   **Demonstrate understanding of employer and employee expectations.**

        Essential topics
1. *Soft skills/work ethics in life and a career*

2. *Job descriptions/job expectations*

3. *Work permits and required documentation*

4. *Indiana Child Labor Laws*

PCC-7.4   **Demonstrate standards of legal and ethical behavior in human, cultural, and societal issues related to technology and digital citizenship.**

        Essential topics
1. *Standards of ethical and responsible behavior regarding*

        a. Use of copyrighted material and trademarks

        b. Social networks

PCC-7.5   **Demonstrate standards of personal appearance, attire, grooming, and etiquette appropriate for specific school, life and career settings.**

        Essential topics
1. *Appropriate personal appearance and etiquette in regard to types of personal and business attire*

2. *Positive business etiquette*